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PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
NEWS 2 Apr 08 "Ask CAS" for self-help around the clock  
NEWS 3 Apr 09 BEILSTEIN: Reload and Implementation of a New Subject Area  
NEWS 4 Apr '09 ZDB will be removed from STN  
NEWS 5 Apr 19 US Patent Applications available in IFICDB, IFIPAT, and IFIUDB  
NEWS 6 Apr 22 Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS  
NEWS 7 Apr 22 BIOSIS Gene Names now available in TOXCENTER  
NEWS 8 Apr 22 Federal Research in Progress (FEDRIP) now available  
NEWS 9 Jun 03 New e-mail delivery for search results now available  
NEWS 10 Jun 10 MEDLINE Reload  
NEWS 11 Jun 10 PCTFULL has been reloaded  
NEWS 12 Jul 02 FOREGE no longer contains STANDARDS file segment  
NEWS 13 Jul 22 USAN to be reloaded July 28, 2002;  
saved answer sets no longer valid  
NEWS 14 Jul 29 Enhanced polymer searching in REGISTRY  
NEWS 15 Jul 30 NETFIRST to be removed from STN  
NEWS 16 Aug 08 CANCERLIT reload  
NEWS 17 Aug 08 PHARMAMarketLetter(PHARMAML) - new on STN  
NEWS 18 Aug 08 NTIS has been reloaded and enhanced  
NEWS 19 Aug 19 Aquatic Toxicity Information Retrieval (AQUIRE)  
now available on STN  
NEWS 20 Aug 19 IFIPAT, IFICDB, and IFIUDB have been reloaded  
NEWS 21 Aug 19 The MEDLINE file segment of TOXCENTER has been reloaded  
NEWS 22 Aug 26 Sequence searching in REGISTRY enhanced  
NEWS 23 Sep 03 JAPIO has been reloaded and enhanced  
NEWS 24 Sep 16 Experimental properties added to the REGISTRY file  
NEWS 25 Sep 16 Indexing added to some pre-1967 records in CA/CAPLUS  
NEWS 26 Sep 16 CA Section Thesaurus available in CAPLUS and CA  
NEWS 27 Oct 01 CASREACT Enriched with Reactions from 1907 to 1985  
NEWS 28 Oct 21 EVENTLINE has been reloaded  
NEWS 29 Oct 24 BEILSTEIN adds new search fields  
NEWS 30 Oct 24 Nutraceuticals International (NUTRACEUT) now available on STN  
NEWS 31 Oct 25 MEDLINE SDI run of October 8, 2002  
NEWS 32 Nov 18 DKILIT has been renamed APOLLIT  
NEWS 33 Nov 25 More calculated properties added to REGISTRY  
NEWS 34 Dec 02 TIBKAT will be removed from STN  
NEWS 35 Dec 04 CSA files on STN

NEWS EXPRESS October 14 CURRENT WINDOWS VERSION IS V6.01,  
CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),  
AND CURRENT DISCOVER FILE IS DATED 01 OCTOBER 2002  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS INTER General Internet Information  
NEWS LOGIN Welcome Banner and News Items  
NEWS PHONE Direct Dial and Telecommunication Network Access to STN  
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that

specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 23:11:15 ON 15 DEC 2002

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 23:11:46 ON 15 DEC 2002

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 13 DEC 2002 HIGHEST RN 476274-11-0

DICTIONARY FILE UPDATES: 13 DEC 2002 HIGHEST RN 476274-11-0

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s chromium picolinate

172271 CHROMIUM

602 PICOLINATE

L1 1 CHROMIUM PICOLINATE

(CHROMIUM(W) PICOLINATE)

=> d l1

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS

RN 27882-76-4 REGISTRY

CN Chromium, tris(2-pyridinecarboxylato-.kappa.N1,.kappa.O2)-, monohydrate (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 2-Pyridinecarboxylic acid, chromium complex

CN Chromium, tris(2-pyridinecarboxylato-N1,O2)-, monohydrate

CN Chromium, tris(picolinato)-, monohydrate (8CI)

OTHER NAMES:

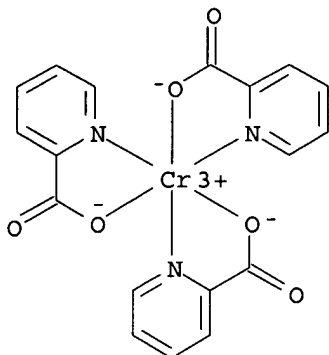
CN **Chromium picolinate monohydrate**

MF C18 H12 Cr N3 O6 . H2 O

CI CCS

LC STN Files: CA, CAPLUS, GMELIN\*, TOXCENTER, USPATFULL

(\*File contains numerically searchable property data)  
CRN (14639-25-9)



● H<sub>2</sub>O

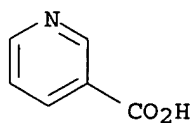
141 REFERENCES IN FILE CA (1962 TO DATE)  
141 REFERENCES IN FILE CAPLUS (1962 TO DATE)

=> s choline  
L2 3992 CHOLINE

=> s chromium nicotinate  
172271 CHROMIUM  
1572 NICOTINATE  
L3 1 CHROMIUM NICOTINATE  
(CHROMIUM(W)NICOTINATE)

=> d l3

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS  
RN 64452-96-6 REGISTRY  
CN 3-Pyridinecarboxylic acid, chromium(3+) salt (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN **Chromium nicotinate**  
CN Chromium(3+) 3-pyridinecarboxylate  
MF C6 H5 N O2 . 1/3 Cr  
LC STN Files: CA, CAPLUS, CHEMCATS, CSCHEM, TOXCENTER, USPATFULL  
CRN (59-67-6)



1/3 Cr(III)

10 REFERENCES IN FILE CA (1962 TO DATE)

10 REFERENCES IN FILE CAPLUS (1962 TO DATE)

=> FIL MEDLINE, BIOSIS, EMBASE, EMBAL, CA, CAPLUS, USPATFUL		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	23.92	24.13

FILE 'MEDLINE' ENTERED AT 23:13:01 ON 15 DEC 2002

FILE 'BIOSIS' ENTERED AT 23:13:01 ON 15 DEC 2002  
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FILE 'EMBASE' ENTERED AT 23:13:01 ON 15 DEC 2002  
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FILE 'CAPLUS' ENTERED AT 23:13:01 ON 15 DEC 2002  
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FILE 'USPATFULL' ENTERED AT 23:13:01 ON 15 DEC 2002  
CA INDEXING COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

=> s l1  
L4 320 L1

=> s l3  
L5 25 L3

=> s l4 or l  
L6 4930891 L4 OR L

=> s l4 or l5  
L7 345 L4 OR L5

=> d his

(FILE 'HOME' ENTERED AT 23:11:15 ON 15 DEC 2002)

FILE 'REGISTRY' ENTERED AT 23:11:46 ON 15 DEC 2002  
L1 1 S CHROMIUM PICOLINATE  
L2 3992 S CHOLINE  
L3 1 S CHROMIUM NICOTINATE

FILE 'MEDLINE, BIOSIS, EMBASE, EMBAL, CA, CAPLUS, USPATFULL' ENTERED AT  
23:13:01 ON 15 DEC 2002  
L4 320 S L1  
L5 25 S L3  
L6 4930891 S L4 OR L  
L7 345 S L4 OR L5

=> file reg		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	8.75	32.88

FILE 'REGISTRY' ENTERED AT 23:14:13 ON 15 DEC 2002  
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STRUCTURE FILE UPDATES: 13 DEC 2002 HIGHEST RN 476274-11-0  
DICTIONARY FILE UPDATES: 13 DEC 2002 HIGHEST RN 476274-11-0

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

```
=> s l carnitine
      1238137 L
      406 CARNITINE
L8      81 L CARNITINE
      (L(W)CARNITINE)
```

```
=> s l-carnitine/cn
L9      1 L-CARNITINE/CN
```

```
=> d l9
```

```
L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS
RN 541-15-1 REGISTRY
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-
   (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, hydroxide, inner
   salt, (R)-
CN Ammonium, (3-carboxy-2-hydroxypropyl)trimethyl-, hydroxide, inner salt, L-
   (8CI)
OTHER NAMES:
CN (-)-Carnitine
CN (-)-L-Carnitine
CN (R)-Carnitine
CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (R)-
CN Carniking
CN Carniking 50
CN Carnitene
CN Carnitine
CN Carnitine, (-)-
CN L-(-)-Carnitine
CN l-Carnitine
CN L-Carnitine
CN Levocarnitine
CN ST 198
CN Vitamin BT
FS STEREOSEARCH
DR 7634-98-2, 101512-81-6, 4209-27-2
MF C7 H15 N O3
CI COM
```

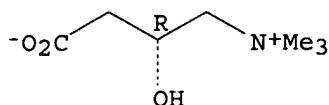
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DIOGENES, DRUGNL, DRUGU, DRUGUPDATES, EMBASE, HODOC\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, PHAR, PHARMASEARCH, PROMT, RTECS\*, TOXCENTER, USAN, USPAT2, USPATFULL

(\*File contains numerically searchable property data)

Other Sources: EINECS\*\*, WHO

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry. Rotation (-).



3917 REFERENCES IN FILE CA (1962 TO DATE)  
788 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
3927 REFERENCES IN FILE CAPLUS (1962 TO DATE)  
11 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> FIL MEDLINE, BIOSIS, EMBASE, EMBAL, CA, CAPLUS, USPATFUL		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	13.96	46.84

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FILE 'BIOSIS' ENTERED AT 23:14:59 ON 15 DEC 2002  
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FILE 'USPATFULL' ENTERED AT 23:14:59 ON 15 DEC 2002  
CA INDEXING COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

=> d his

(FILE 'HOME' ENTERED AT 23:11:15 ON 15 DEC 2002)

FILE 'REGISTRY' ENTERED AT 23:11:46 ON 15 DEC 2002

L1 1 S CHROMIUM PICOLINATE  
L2 3992 S CHOLINE  
L3 1 S CHROMIUM NICOTINATE

FILE 'MEDLINE, BIOSIS, EMBASE, EMBAL, CA, CAPLUS, USPATFULL' ENTERED AT  
23:13:01 ON 15 DEC 2002

L4 320 S L1  
L5 25 S L3  
L6 4930891 S L4 OR L  
L7 345 S L4 OR L5

FILE 'REGISTRY' ENTERED AT 23:14:13 ON 15 DEC 2002

L8 81 S L CARNITINE  
L9 1 S L-CARNITINE/CN

FILE 'MEDLINE, BIOSIS, EMBASE, EMBAL, CA, CAPLUS, USPATFULL' ENTERED AT  
23:14:59 ON 15 DEC 2002

=> s l8 or l9  
'CN' IS NOT A VALID FIELD CODE  
L10 30949 L8 OR L9

=> s l10 and l7  
L11 31 L10 AND L7

=> s animal feed  
L12 46002 ANIMAL FEED

=> s l1 and l12  
L13 0 L1 AND L12

=> s feed  
L14 894035 FEED

=> s l14 and l11  
L15 6 L14 AND L11

=> dup rem  
ENTER L# LIST OR (END):l15  
PROCESSING COMPLETED FOR L15  
L16 4 DUP REM L15 (2 DUPLICATES REMOVED)

=> d l16 1-4 ibib, kwic

L16 ANSWER 1 OF 4 CA COPYRIGHT 2002 ACS DUPLICATE 1  
ACCESSION NUMBER: 137:310100 CA  
TITLE: Carnitine and chromium **feed** additives for  
enhancing reproductive performance in sows  
INVENTOR(S): Real, Daryl; Tokach, Michael D.; Dritz, Steve S.;  
Nelssen, Jim L.; Goodband, Robert D.; Woodworth,  
Jason; Owen, Kevin Q.  
PATENT ASSIGNEE(S): Lonza Ltd., Switz.; Kansas State University Research  
Foundation  
SOURCE: PCT Int. Appl., 23 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002085134	A1	20021031	WO 2002-US12921	20020423
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, EC, EE, ES, FI, GB, GD, GE, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,				

CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
PRIORITY APPLN. INFO.:

EP 2001-109978 A 20010424  
US 2001-291920P P 20010517  
US 2002-87198 A1 20020301

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Carnitine and chromium **feed** additives for enhancing reproductive  
performance in sows  
AB The present invention relates to supplementing the diets to sows during  
the periods of gestation, lactation, and breeding by feeding L-carnitine  
and chromium. The supplementation enhances pork productivity by  
increasing the no. of pigs born alive in the subsequent reproductive  
cycle. Sow diets of this invention include L-carnitine and L-carnitine  
salts and trivalent chromium salts, such as chromium picolinate and  
chromium nicotinate. L-carnitine is generally added to the swine  
**feed** formulation in the amt. of from about 20 to about 1500 ppm,  
and the trivalent chromium salt is generally added to the swine  
**feed** formulation in the amt. of from about 20 ppb to about 1000  
ppb. The invention also relates to supplemented sow diets and  
**feed** supplement formulation.  
ST sow reprodn **feed** carnitine chromium  
IT Carriers  
Feed additives  
Feeding experiment  
Lactation  
Longevity  
Pregnancy  
Reproduction, animal  
Swine  
(carnitine and chromium **feed** additives for enhancing  
reproductive performance in sows)  
IT Meat  
(pork; carnitine and chromium **feed** additives for enhancing  
reproductive performance in sows)  
IT 98-98-6D, Picolinic acid, chromium complexes **541-15-1**,  
L-Carnitine **541-15-1D**, L-Carnitine, salts 7440-47-3D,  
Chromium, salts **64452-96-6**, Chromium nicotinate  
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(carnitine and chromium **feed** additives for enhancing  
reproductive performance in sows)  
IT 7631-86-9, Silica, biological studies  
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical  
process); PYP (Physical process); BIOL (Biological study); PROC (Process);  
USES (Uses)  
(carrier; carnitine and chromium **feed** additives for enhancing  
reproductive performance in sows)

L16 ANSWER 2 OF 4 USPATFULL

ACCESSION NUMBER: 2002:160382 USPATFULL  
TITLE: Diet composition and method of weight management  
INVENTOR(S): Alviar, Barbara, Rockford, MI, United States  
Connor, Lynne Marie, Rockford, MI, United States  
Dixon, Albert Augustus, Tustin, CA, United States  
Magee, Molly Marie, Aliso Viejo, CA, United States  
Maly, Eugene Robert, Kentwood, MI, United States  
McLauchlan, Suzanne M., Ada, MI, United States  
PATENT ASSIGNEE(S): Access Business Group International LLC, Ada, MI,  
United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6413545	B1	20020702
	WO 2000012080		20000309



APPLICATION INFO.: US 2001-786099 20010508 (9)  
 WO 1999-US20116 19990901  
 20010508 PCT 371 date

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-98715P	19980901 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Page, Thurman K.	
ASSISTANT EXAMINER:	Evans, Chareese	
LEGAL REPRESENTATIVE:	Amway Corporation	
NUMBER OF CLAIMS:	16	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	0 Drawing Figure(s); 0 Drawing Page(s)	
LINE COUNT:	678	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . example, U.S. Pat. Nos. 5,428,072 and 5,554,646 to Cook disclose that conjugated linoleic acid ("CLA") reduces body fat and increases "feed efficiency." U.S. Pat. No. 3,764,692 to Lowenstein discloses that Garcinia cambogia contains hydroxy citric acid, which can be used to. . .

SUMM . . . Novel Compositions Therefore" issued Dec. 3, 1991; U.S. Pat. No. 5,428,072 to Cook entitled "Method of Increasing the Efficiency of Feed Conversion in Animals" issued Jun. 27, 1995; U.S. Pat. No. 5,430,066 to Cook entitled "Methods for Preventing Weight Loss, Reduction. . .

IT 60-33-3D, Linoleic acid, conjugates 541-15-1, L-Carnitine 7440-62-2D, Vanadium, compds., biological studies 15281-55-7 27882-76-4 220349-64-4, L-Carnitine fumarate, biological studies (diet compn. and method of wt. management)

L16 ANSWER 3 OF 4 USPATFULL

ACCESSION NUMBER: 1999:144704 USPATFULL

TITLE: Layered heat exchangers

INVENTOR(S): Nakamura, Jumpei, Oyama, Japan  
 Shibata, Hiroki, Oyama, Japan  
 Yamazaki, Keiji, Kawachi-gun, Japan  
 Hanafusa, Tatsuya, Oyama, Japan  
 Go, Nobuaki, Oyama, Japan

PATENT ASSIGNEE(S): Showa Aluminum Corporation, Sakaishi, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5984000		19991116
APPLICATION INFO.:	US 1998-98715		19980617 (9)
RELATED APPLN. INFO.:	Division of Ser. No. US 1997-803264, filed on 20 Feb 1997, now patented, Pat. No. US 5810077 which is a continuation of Ser. No. US 1994-365463, filed on 28 Dec 1994, now abandoned		

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1993-337439	19931228
	JP 1994-110890	19940525
	JP 1994-193190	19940817
	JP 1994-233248	19940928
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Leo, Leonard	
LEGAL REPRESENTATIVE:	Armstrong,, Westerman, Hattori, McLeland and Naughton	
NUMBER OF CLAIMS:	4	

EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 32 Drawing Figure(s); 17 Drawing Page(s)  
LINE COUNT: 1232

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DRWD FIG. 29 is a cross sectional view showing a refrigerant **feed** pipe for use in the heat exchanger;

DRWD FIG. 30 is a schematic perspective view of a heat exchanger as a ninth embodiment of the invention, a refrigerant **feed** pipe and a refrigerant discharge pipe being also shown;

DETD With the evaporator 1 described above, a refrigerant introduced into the front header 7 from a refrigerant **feed** pipe 27 (see FIG. 1) at the right side of the evaporator flows into the flat tubes 5 from the.

DETD The refrigerant is introduced into the rear header 6 through a **feed** pipe 27 and the inlet pipe 30 at the left side of the evaporator 1 (see FIG. 17) by way. . . .

DETD . . . the outlet 42. The rear header 6 has at its left end a pipe hole 44, through which a refrigerant **feed** pipe 27 is inserted. The **feed** pipe 27 comprises an inner pipe portion 27a extending rightward into the rear header 6 and an outer pipe portion. . . .

DETD . . . length. The rear header partition 46 is formed with a socket hole 43. The inner pipe portion 27a of the **feed** pipe 27 is inserted into the rear header 6 with a refrigerant passing clearance left in refrigerant passing openings 8. . . .

DETD . . . rear header compartment of the inlet passageway 40A from the forward end of inner pipe portion 27a of the refrigerant **feed** pipe 27. The refrigerant is turned by the right end plate 2 and flows into the corresponding 5 flat tubes. . . .

DETD The inner pipe portion 27a of the **feed** pipe 27, except for its opposite ends, is internally and externally provided with parallel fins 47, 48 extending longitudinally of. . . .

DETD The forward end of the inner pipe portion 27a of the **feed** pipe 27 is secured by brazing to the peripheral edge of the socket 43 of the rear header partition 46.

DETD With reference to these drawings, the illustrated layered evaporator 1 has a pipe connecting block 50 formed with a refrigerant **feed** bore 51 and a refrigerant discharge bore 52 in communication with a refrigerant inlet 41 and a refrigerant outlet 42, respectively; a refrigerant **feed** pipe 27 and refrigerant discharge pipe 28 which are connected to the inlet 41 and the outlet 42 by the. . . .

DETD The block 50 is secured to the evaporator 1 with the downstream end of its **feed** bore 51 opposed to the inlet 41 and with the upstream end of the discharge bore 52 opposed to the. . . .

DETD The **feed** pipe 27 and discharge pipe 28 have retaining protuberances 27A, 28A formed by beading and each positioned close to its. . . .

DETD The mount member 60 is formed with a U-shaped cutout 61 opened downward for the **feed** pipe 27 to fit in, and a U-shaped cutout 62 opened rearward for the discharge pipe 28 to fit in.

DETD . . . connected pipe end is inserted in the cutout 61 (62) of the mount member 60. The connected end of the **feed** pipe 27 is inserted into the **feed** bore 51 in the connecting block 50 from the bore upstream end, and the connected end of the discharge pipe. . . .

DETD . . . of the block 50 with a screw 66. In this way, the two pipes 27, 28 are connected to the **feed** inlet 41 and discharge outlet 42 with their retaining protuberance 27A, 28A held between the mount member 60 and the. . . .

DETD . . . right end plate 47, which is provided with the discharge outlet 42 communicating with a rear header 6, and the **feed** inlet 41 in communication with a front header 7.

DETD . . . pipe 57 is inserted in an annular stepped portion formed in the block 50 around the downstream end of the **feed** bore 51. These pipe ends are secured by brazing. The left ends of the front and rear headers 7, 6. . . .

DETD The **feed** pipe 27 is fitted in the U-shaped cutout 51 of the mount member 60 from below. The discharge pipe 28. . .

DETD . . . 57 is enlarged by flaring into a large-diameter portion 57b, while the pipe connecting block 50 is formed around the **feed** bore 51 with a stepped portion 67 engageable with the large-diameter portion 57b of the inner pipe 57, and a. . .

DETD According to the ninth and tenth embodiments, the refrigerant **feed** pipe 27 and discharge pipe 28 are removably connected to the evaporator 1 by the pipe connecting block 50 and. . .

DETD Although the **feed** pipe 27 and discharge pipe 28 are both attached by one mount member 60 according to the ninth and tenth. . .

IT 60-33-3D, Linoleic acid, conjugates 541-15-1, L-Carnitine 7440-62-2D, Vanadium, compds. 15281-55-7 27882-76-4 220349-64-4, L-Carnitine fumarate, biological studies (diet compn. and method of wt. management)

L16 ANSWER 4 OF 4 CA COPYRIGHT 2002 ACS DUPLICATE 2

ACCESSION NUMBER: 132:150999 CA

TITLE: Effects of L-carnitine, chromium picolinate with different fat sources on growth and nutrient digestibility in pigs weaned at 21 days of age

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SOURCE: Han'guk Ch'uksan Hakhoechi (1999), 41(4), 445-456  
CODEN: HGCHAG; ISSN: 0367-5807

PUBLISHER: Korean Society of Animal Sciences

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB A total of 160 weaned piglets (Landrace .times. Yorkshire .times. Duroc) that averaged 21 days of age and 5.7 kg of body wt. were weaned (22.+-.1 days of age) and housed in 1.times.2 m2 pens with concrete slat flooring by completely randomized block design to investigate the effects of L-carnitine, chromium picolinate with different fat sources in weaned piglets. Pigs were grouped using a 2.times.2.times.2 factorial design into a completely randomized block design with 4 replications, 5 heads per replicate. Pigs fed L-carnitine and chromium picolinate with coconut oil showed the best performance during the entire period. During 0 .apprx. 14 days, av. daily gain showed to be affected by the supplementation of carnitine as well as chromium picolinate (p = 0.0021 and 0.0030, resp.). However, use of coconut oil (medium chain fatty acids source) did not affect av. daily gain of pigs during first 2 wk. **Feed** intake was not affected by the supplementation of chromium picolinate nor fat sources. However, carnitine improved the av. daily **feed** intake of piglets during first 2 wk (p = 0.0054). During the third week of trial, coconut oil and chromium picolinate improved the av. daily gain of piglets (p = 0.0024). However, L-carnitine did not improve the av. daily gain of piglets. F/G ratio also was not affected by the use of coconut oil, however chromium picolinate and carnitine improved the F/G ratio (p = 0.0004 and 0.0015 resp.). For overall period, use of coconut oil, chromium picolinate and L-carnitine improved the av. daily gain (p = 0.0157, 0.0001 and 0.0059 resp.). By the increased **feed** intake, no difference was found in av. daily **feed** intake and chromium picolinate and carnitine improved the F/G ratio of piglets. The best performance was found in pigs fed coconut oil, chromium picolinate and L-carnitine. Proximate nutrient digestibility was improved as the use of coconut oil and supplementation of chromium picolinate and L-carnitine. Pigs fed coconut oil with chromium picolinate and L-carnitine showed the best nutrient digestibility. Fatty acid source, chromium picolinate and L-carnitine affected nutrient digestibility during entire period. The

improved ADG and F/G of pigs fed coconut oil with chromium picolinate and L-carnitine for overall period could be explained by higher digestibilities of nutrients. Use of coconut oil and/or chromium picolinate did not increase the **feed** price, meanwhile L-carnitine was shown to increase the **feed** price even in **feed** cost for 1,000g wt. gain because of its high ingredient price and high dose as well. Thus, use of L-carnitine showed an undesirable response in **feed** cost analyses.

IT 541-15-1, L-Carnitine 27882-76-4

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
(L-carnitine and chromium picolinate effect on growth and nutrient digestibility in pigs)